

**REMARKS****Summary of the Amendments**

By the foregoing amendments, claims 1 and 3-18 have been amended, and claim 2 has been cancelled, whereby claims 1 and 3-18 will be pending. Of the pending claims, only claim 1 is an independent claim.

Support for the amendments to the claims can be found throughout the specification and especially at page 12, line 10 to page 13, line 4 of Applicants' specification. Further support for the amendments can be found at page 14, line 19 to page 15, line 7 of Applicants' specification.

Any amendments to the claims which have been made in this response and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

**Claim of Priority**

Applicants thank the Examiner for acknowledging the claim of foreign priority and receipt of the certified copies of the priority documents.

**Information Disclosure Statement**

Applicants thank the Examiner for consideration of the Information Disclosure statement filed March 14, 2004.

**Claim Objections**

Claims 1-18 have been objected to because of improper and repetitious terminology. In response, Applicants respectfully submit that the claims have been amended to address the examiner's objections and render the same moot.

Reconsideration and withdrawal of these objections is respectfully requested.

**Rejections Under 35 U.S.C. § 112**

Claims 1-18 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is rejected because the examiner asserts that it is unclear as to what the phrase "0.1 to 10% by weight of Ag in 70 to 99% by weight of titania" means. Claim 1 has been amended above to render the rejection moot.

Claims 6, 13 and 14 are rejected because of improper Markush terminology and also because it is unclear to the examiner as to whether the

claimed silver salts are required in the final catalyst composition or only used to make the final catalyst composition. In response, applicants have amended claims 6, 13 and 14 to contain the proper Markush terminology. Further, Applicant respectfully submits that the claimed silver salt is part of the final catalyst composition.

Reconsideration and withdrawal of these rejections is respectfully requested.

#### **Rejections Under 35 U.S.C. § 102(b)**

Claims 1 and 5 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 3,464,930 to Goehre et al.

The Examiner asserts that Goehre et al. teaches all the elements of claims 1 and 5. The Goehre et al. document discloses a catalyst composition containing an inert, nonporous carrier that is coated with an active composition consisting essentially of 1-15 % vanadium (in the form of vanadium pentoxide) and 85-99% titania (in the form of titanium dioxide) (see column 5, line 65 – column 6, line 8). Goehre et al. goes on to state that the vanadium is present in the catalyst in a range of about 0.05-3% by weight. Additionally, the active catalyst may contain oxides of the following elements: silver, iron, cobalt, nickel, chromium, molybdenum and tungsten in an amount of 0.1-3% by weight (see column 6, lines 19-24). Therefore, Goehre et al. does not disclose, for example, a catalyst which has been acid treated.

As the Examiner is well aware, for a rejection under 35 U.S.C. § 102(b) to be proper, all of the elements of the claim in question must be shown in a single document. Goehre et al. does not disclose all of the elements of claim 1, and thus, a rejection under 35 U.S.C. § 102(b) is inapplicable.

Applicant's claim 1 recites: A catalyst comprising 0.1 to 5% by weight of vanadium, 1 to 12% by weight of a metal chosen from Group 6A metals and 0.1 to 10% by weight of Ag on 70 to 99% by weight of titania wherein the catalyst is treated with acid-treatment.

Goehre et al. does not disclose or suggest such a catalyst. Therefore, in light of the foregoing amendments to claim 1, Applicant respectfully request reconsideration and withdrawal of the rejections made to independent claim 1 and dependent claim 5.

#### **Rejections Under 35 U.S.C. § 102(b)/103(a)**

Claims 2, 3, 6, 8, 11-14, 17 and 18 have been rejected under 35 U.S.C. § 102(b) as being anticipated, or in the alternative, under 35 U.S.C. § 103(a) as being obvious over U.S. Patent 3,464,930 to Goehre et al.

The Examiner asserts that even though the Applicant's claimed catalyst is not made by the same process (process steps, materials, conditions...) as the catalyst of Goehre et al., the claimed catalyst is the same as that of Goehre et al. Applicants maintain that Goehre et al. does not teach or suggest 'acid treatment of the Goehre et al. catalyst composition. Applicants submit that the currently

amended claim 1 distinguishes Applicant's claimed catalyst from that of Goehre et al., as described above. Since claims 2, 3, 6, 8, 11-14, 17 and 18 depend from claim 1, either directly or indirectly, Applicants respectfully request reconsideration and withdrawal of the rejections made to claims 2, 3, 6, 8, 11-14, 17 and 18

### **Rejections Under 35 U.S.C. § 103(a)**

Claims 4, 7, 9, 10, 15 and 16 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 3,464,930 to Goehre et al., as applied to claims 1 and 5 above, and further in view of U.S. Patent 6,700,000 B1 to Heidemann et al.

The Examiner asserts that Goehre et al. teaches all the elements of original claims 1 and 5. The Examiner asserts that Applicant's claimed titania materials and ceramic honeycomb supports are known and conventional to one of ordinary skill in the art. Thus, the Examiner alleges that it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to incorporate the ceramic honeycomb supports into the catalyst of Goehre et al. Applicants respectfully disagree and traverse the rejection as follows.

In order to establish a *prima facie* case of obviousness, the Office must meet three criteria: (1) that the combination of references teach or suggest to the ordinary skilled artisan all of the recited claim limitations; (2) that there must be motivation in the cited art to combine the references to devise the claimed invention; and (3) there must be a reasonable expectation of success of

successfully practicing the invention. M.P.E.P. § 2143. In the present case, the Office has failed to make a *prima facie* case of obviousness because it has not met all three of the above criteria.

With respect to the teaching of using the anatase form titania, as the Examiner alleges is taught by Heidemann et al., Applicant's submit that while Heidemann et al. do disclose using the anatase form of titania, the Office Action provides no motivation to combine the disclosures of Goehre et al. and Heidemann et al. Applicant's note that neither Goehre et al. nor Heidemann et al. teach or suggest the specific recitation of amended claim 1 of "wherein the catalyst is treated with acid-treatment."

As discussed above, there is no motivation to combine the documents employed in the rejection. Therefore, under the law, the documents are insufficient to support a prima facie case of obviousness and the rejection should be reversed on this basis.

The Court of Appeals for the Federal Circuit has emphasized the need for motivation in sustaining a finding of obviousness based on a combination of references. In Yamanouchi Pharmaceutical Company v. Danbury Pharmacal Inc., 56 USPQ2d 1561 (Fed. Cir. 2000), the court stated, in discussing and quoting the portion of In re Rouffet et al., "This court has emphasized the importance of the motivation to combine: [going on to reproduce the statement that 'As this court has stated, virtually all [inventions] are combinations of old elements.'...] Yamanouchi, 56 USPQ2d at 1644. The court goes on to state that: "To counter this potential weakness in the obviousness construct, the suggestion

to combine requirement stands as a critical safeguard against hindsight analysis and rote application of the legal test for obviousness.”

With respect to the teaching of using ceramic honeycomb support structures, the Examiner admits that this is not disclosed by Goehre et al. The Heidemann et al. disclosure is silent on this teaching as well. Therefore, Applicants assert the criteria that establishes a *prima facie* case of obviousness cannot be met.

Finally, Applicants maintain that Goehre et al. does not teach or suggest acid treatment of the Goehre et al. catalyst composition. Since claims 4, 7, 9, 10, 15 and 16 depend upon claim 1, either directly or indirectly, Applicants respectfully request reconsideration and withdrawal of the rejections made to claims 4, 7, 9, 10, 15 and 16.

#### **Application is Allowable**

Thus, Applicants respectfully submit that each and every pending claim of the present invention meets the requirements for patentability under 35 U.S.C. §§ 102 and 103, and respectfully request the Examiner to indicate allowance of each and every pending claim of the present invention.

#### **CONCLUSION**

In view of the foregoing, it is submitted that none of the references of record, either taken alone or in any proper combination thereof, anticipates or renders obvious the Applicants' invention, as recited in each of amended claims 1 and 3-18. In addition, the applied references of record have been discussed

and distinguished, while significant claimed features of the present invention have been pointed out.

Accordingly, reconsideration of the outstanding Office Action and allowance of the present application and all the claims therein are respectfully requested and now believed to be appropriate.

Respectfully submitted,  
Du-Soung KIM et al.

A handwritten signature in black ink, appearing to read "Bruce H. Bernstein", written over a horizontal line.

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November 7, 2005  
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